

REMARKS

Claims 1-4 and 15 have been canceled without prejudice.

Claims 5-14, 16-25 and new claims 26 and 27 are pending in the application.

Applicants wish to call the Examiner's attention to the Preliminary Amendment filed in this application on February 24, 2004 to correct the inventorship of the present invention to: David R. Hall; H. Tracy Hall, Jr.; David Pixton; Scott Dahlgren; Cameron Sneddon; and Joe Fox. A new oath/declaration was enclosed reflecting the corrected inventorship, and the appropriate fee under 37 C.F.R. 1.16(e) for filing of a late oath/declaration was paid. Applicants request confirmation from the Examiner that this amendment has been entered in this application.

Applicants also wish to advise the Examiner that a supplemental Information Disclosure Statement was filed in the USPTO on November 3, 2004, disclosing additional references and an Office Action in related U.S. Patent Application 10/430,734 "Loaded Transducer for Downhole Drilling Components," filed on May 6, 2003.

The specification has been amended now to have the present application depend as a continuation-in-part from pending U.S. Patent Application Serial No.10/430,734 "Loaded Transducer for Downhole Drilling Components" filed on May 6, 2003 and also as a continuation-in-part of U.S. Patent Application Serial No.10/612,255 "Transmission Element for Downhole Drilling Components" filed on July 2, 2003, which is a continuation-in-part of U.S. Patent Application serial No.10/453,076 entitled "Improved Transducer for Downhole Drilling Components" filed on June 3, 2003.

Furthermore, the application has been amended now to include a Statement of Government Interest.

The Examiner objected to the Drawings, stating they must show every feature specified in the claims, specifically claims 3 and 4. Claims 3 and 4 have been canceled now. Applicants believe the objections to the Drawings have been rendered moot in light of the above amendments. Therefore, Applicants respectfully request the Examiner withdraw all objections to the Drawings.

The Examiner objected to claims 11 and 12 due to informalities. Claim 11 has been amended now to change the word "contracts" in line 3 to -- contacts--.

The Examiner rejected claims 1-7, 9, 11, 12, 14-18, and 20-25 under 35 U.S.C. 102(b) as being anticipated by Dickson, Jr. et al. (3,696,332). Claims 1-4 and 15 have been canceled without prejudice.

The present invention is drawn to an electrical contact system with a housing to accommodate a resilient material and a conductor. The housing has an angled surface interacting with a corresponding angled surface in a recess at the end of the tool joint to exert a first force urging the contact outward from the recess. There is a second electrical contact in a mating tool joint, wherein, upon assembly of the tool joints, the first and second contacts connect and are held engaged by the force.

There is no housing for the contact, nor any angled ramps on the tool joint disclosed in Dickson, Jr. et al. (3,696,332). Furthermore, it appears that Dickson, Jr. et al. (3,696,332) relies upon the resilience of the elastomeric material as a means for energizing his contacts (Col. 2, lines 43-49), or alternately upon the resilience of the contacts themselves combined with the resilience of the

elastomeric material (Col. 3, lines 35-44). In both instances this reliance upon the resilience of the elastomeric material limits the choices of which elastomeric materials may be used.

In order to clearly and distinctly point out the important structural and functional differences between Dickson, Jr. et al. and the present invention, new Claim 26 is drawn to, and rejected claim 14 has been amended now to claim an electrical contact system with a housing to accommodate a resilient material and a conductor. The housing has an angled surface interacting with a corresponding angled surface in a recess at the end of the tool joint to exert a first force urging the contact outward from the recess. There is a second electrical contact in a mating tool joint, wherein, upon assembly of the tool joints, the first and second contacts connect and are held engaged by the force.

These are structures which are neither disclosed nor implied by Dickson, Jr. et al. In the present invention, it is desirable to have as few constraints as possible placed upon the mechanical properties of the resilient material. Since one embodiment of the present invention is an elastomeric material with selected dielectric properties, there are more options for obtaining the proper dielectric properties for this material if its mechanical properties as a biasing member are secondary.

Therefore, the structure of the present invention wherein a biasing force is generated by the interaction of the angled ramps between the housing and the recess in the tool joint is important. With this structure, the designer is free to choose an elastomeric material based primarily upon its dielectric properties and then secondarily upon its mechanical resilience.

Accordingly, Applicants believe that independent claim 14 as amended and new independent claim 26 are now allowable, and therefore respectfully request allowance of these claims.

Similarly, pending rejected dependent claims 5-7, 9, 11, 12, 16-18, 20, and new dependent claim 27 are also allowable over this reference, as they now depend from allowable base claims.

Accordingly, Applicants respectfully request allowance of claims 5-7, 9, 11, 12, 14, 16-18, 20, 26 and 27.

Applicants respectfully traverse the rejection of method claims 21-25 over Dickson, Jr. et al. (3,696,332). In the method of claims 21-25 first and second electrical contacts are provided which have among other components, a resilient material. The method is drawn to adjusting the dielectric properties of the resilient material to provide a desired electrical impedance.

There are no similar methods disclosed in Dickson, Jr. et al. Furthermore, nothing whatsoever is said or implied in Dickson, Jr. et al. about the dielectric properties of the elastomeric material. Since these are methods claims, the recitations mentioned by the Examiner in paragraph 4 of the Office Action (in re: ex parte Masham, 2 USPQ2d 1647 1987) do not apply.

Since the methods of pending claims 21-25 are neither disclosed nor described in Dickson, Jr. et al., Applicants respectfully request that the Examiner withdraw this rejection, and allow claims 21-25.

The Examiner rejected claims 1 and 13 under 35 U.S.C. 102(b) as being anticipated by Termohlen (4,690,212). Claim 1 has been canceled now. Claim 13 now depends from new, allowable claim 26 which has structures which are neither shown nor described by Termohlen, as described above. Termohlen discloses electrical connecting structures which are very similar to those of Dickson, Jr. et al. with the addition of a plurality of connection elements concentrically arranged. As stated above, there are the important structural and functional differences between the present invention and Termohlen. In the present invention there is an electrical contact

system with a housing to accommodate a resilient material and a conductor. The housing has an angled surface interacting with a corresponding angled surface in a recess at the end of the tool joint to exert a first force urging the contact outward from the recess. There is a second electrical contact in a mating tool joint, wherein, upon assembly of the tool joints, the first and second contacts connect and are held engaged by the force.

These structures are not present in Termohlen (4,690,212). For this reason and also since claim 13 now depends from allowable base claim 26, Applicants believe claim 13 is allowable.

The Examiner rejected claim 10 under 35 U.S.C. 103(a) as being unpatentable over Dickson, Jr. et al.

The Office also rejected claims 8 and 19 under 35 U.S.C. 103(a) as being unpatentable over Dickson, Jr. et al. in view of Harbonn, et al. (3,693,133).

Since claims 8, 10, and 19 depend now from allowable base claims 26 or 14, applicants believe these claims are also allowable.

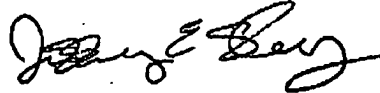
Accordingly, Applicants respectfully request allowance of claims 8, 10, 13, and 19.

In view of the amendments and arguments made herein, Applicants respectfully submit that the application is now in condition for allowance. Accordingly, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

It is believed that there are no fees due at this time. However, the Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this

application without specific authorization, or credit any overpayment, to Deposit Account 180584. If there are any questions concerning the above, please contact the undersigned at 281-878-5658.

Respectfully submitted,



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